CLEAN VERSION OF THE ENTIRE SET OF CLAIMS

1. (Amended) An apparatus comprising:

a cache management logistics to control a transfer of a trace;

a first cache coupled to the cache management logistics to evict the trace based on a replacement mechanism; and

a second cache coupled to the cache management logistics to receive the evicted trace based on a first number of accesses to the trace.

2. The apparatus of claim 1 wherein the trace has a usage counter, the usage counter being used to count the number of accesses to the trace.

3. (Amended) The apparatus of claim 2 further comprising a comparator to compare a first threshold value to the number of accesses to the trace, the first threshold value being a first fixed number or a first dynamically adjusted number.

4. The apparatus of claim 3 wherein the trace is transferred from the first cache to the second cache when the first threshold value is less than the number of accesses to the trace.

5. The apparatus of claim 3 wherein the trace is discarded from the first cache when the first threshold value is more than or equal to the number of accesses to the trace.

6. The apparatus of claim 4 further comprising a level 2 (L2) cache to receive the trace, the trace being transferred to the first or second cache for execution.

7. The apparatus of claim 6 wherein trace is transferred from the second cache to the L2 cache when a second threshold value is less than a second number of accesses to the trace, the second threshold value being fixed or dynamically adjusted.

8. (Amended) The apparatus of claim 4 wherein the trace is discarded from the second cache when a second threshold value is more than a second number of accesses to the trace, the second threshold value being a fixed number or a dynamically adjusted number.

9. The apparatus of claim 8 wherein the second number of accesses to the trace is a number of accesses to the trace counting from a time the trace first enters the first cache.

10. The apparatus of claim 1 wherein the replacement mechanism is a Least Recently Used (LRU) mechanism.

11. (Amended) A method comprising:

controlling a transfer of a trace;

evicting the trace based on a replacement mechanism using a first cache; and

receiving the evicted trace based on a first number of accesses to the trace using a second cache.

12. The method of claim 11 further comprising counting the first number of accesses to the trace.

13. (Amended) The method of claim 12 further comprising comparing a first threshold value to the number of accesses to the trace, the first threshold value being a first fixed number or a first dynamically adjusted number.

14. The method of claim 13 further comprising transferring the trace from the first cache to the second cache when the first threshold value is less than the number of accesses to the trace.

15. The method of claim 13 further comprising discarding the trace from the first cache when the first threshold value is more than or equal to the number of accesses to the trace.

16. The method of claim 14 further comprising receiving the trace by the second level (L2) cache, the trace being transferred to the first or second cache for execution.

17. The method of claim 16 further comprising transferring the trace to the L2 cache when a second threshold value is less than a second number of accesses to the trace, the second threshold value being fixed or dynamically adjusted.

18. (Amended) The method of claim 14 further comprising discarding the trace when a second threshold value is more than a second number of accesses to the trace, the second threshold value being a fixed number or a dynamically adjusted number.

19. The method of claim 18 wherein the second number of accesses to the trace is a number of accesses to the trace counting from a time the trace first enters the first cache.

20. The method of claim 11 wherein the replacement mechanism is a Least Recently Used (LRU) mechanism.

21. (Amended) A system comprising:

an execution unit; and

a cache unit couple to the execution unit to provide the execution unit a trace, the cache unit comprising:

a cache management logistics to control a transfer of the trace;

a first cache coupled to the cache management logistics to evict the evicted trace based on a replacement mechanism; and

a second cache coupled to the cache management logistics to receive the trace based on a first number of accesses to the trace.

22. The system of claim 21 wherein the trace has a usage counter, the usage counter being used to count the number of accesses to the trace.

23. (Amended) The system of claim 22 further comprising a comparator to compare a first threshold value to the number of accesses to the trace, the first threshold value being a first fixed number or a first dynamically adjusted number.

24. The system of claim 23 wherein the trace is transferred from the first cache to the second cache when the first threshold value is less than the number of accesses to the trace.

25. The system of claim 23 wherein the trace is discarded from the first cache when the first threshold value is more than or equal to the number of accesses to the trace.

26. The system of claim 24 further comprising a level 2 (L2) cache to receive the trace, the trace being transferred to the first or second cache for execution.

27. The system of claim 26 wherein trace is transferred from the second cache to the L2 cache when a second threshold value is less than a second number of accesses to the trace, the second threshold value being fixed or dynamically adjusted.

28. (Amended) The system of claim 24 wherein the trace is discarded from the second cache when a second threshold value is more than a second number of accesses to the trace, the second threshold value being a fixed number or a dynamically adjusted number.

29. The system of claim 28 wherein the second number of accesses to the trace is a number of accesses to the trace counting from a time the trace first enters the first cache.

30. The system of claim 21 wherein the replacement mechanism is a Least Recently Used (LRU) mechanism.